

CLAIMS

1. A method for making a dispersion or an emulsion (41) from at least two fluids considered to be immiscible, said fluids constituting a dispersed phase (40) and a dispersing phase (44), said dispersed phase (40) being forced through a porous body (24) into the dispersing phase (44), characterized in that said porous body (24) is made to vibrate by excitation of a mechanical, electrical or magnetic type.
- 10 2. The method as claimed in claim 1, characterized in that the dispersing phase (44) circulates at the exit surface of the porous body (24).
3. The method as claimed in claim 2, characterized in that the emulsion (41) is recirculated in the porous body (24), which becomes loaded with dispersed phase (40) during the process.
- 15 4. The method as claimed in any one of the preceding claims, characterized in that the frequencies and/or the power of the vibrations are controlled.
- 20 5. The method as claimed in any one of the preceding claims, characterized in that an emulsifier is added to at least one of the two phases (40, 44).
6. The method as claimed in any one of the preceding claims, characterized in that the dispersed phase (40) is forced through the porous body (24) under controlled conditions of temperature, pressure, flow rate, composition and agitation.
- 25 7. The method as claimed in any one of the preceding claims, characterized in that the dispersing phase (44) circulates at the surface of the porous body (24) under controlled conditions of temperature, pressure, flow rate, composition and agitation.
- 30 8. The method as claimed in any one of the preceding claims, characterized in that a wave in the microwave frequency range, which causes heating of the porous body (24), is superimposed on the excitation at the frequencies which generate the vibrations of the porous body.
- 35 9. The method as claimed in any one of the

preceding claims, characterized in that it consists in using said dispersion or emulsion (41) to make cosmetic, dermopharmaceutical or pharmaceutical products.

5 10. A device for making a dispersion or an emulsion (41) from at least one fluid, comprising at least:

- a porous body (24) having a porous part (42) through which said fluid (40) can be forced, said porous body (24) having a so-called internal cavity
10 (22),

- a case (23) which surrounds at least said porous part (42) in a leaktight fashion so as to define a so-called external cavity (21) into which said porous part (42) opens, it being possible to convey said fluid
15 (40) into said external cavity (21),

characterized in that it has a system (51, 151, 251) for making the porous body (24) vibrate, which can apply vibrations directly to the porous body (24).

11. The device as claimed in claim 10,
20 characterized in that it comprises a system (1) for supplying said fluid (40), which can deliver said fluid (40) into the external cavity (21) under controlled conditions of temperature, pressure, flow rate, composition and agitation.

25 12. The device as claimed in either one of claims 10 and 11, characterized in that it comprises a system (8) for supplying another fluid (44), which can deliver this other fluid (44) into said internal cavity (22) under controlled conditions of temperature, pressure,
30 flow rate, composition and agitation.

13. The device as claimed in any one of claims 10, 11 and 12, characterized in that it comprises an extraction system (3) making it possible to discharge, store or send the emulsion or the dispersion (41) to
35 another system, or to recirculate the emulsion or the dispersion (41).

14. The device as claimed in any one of claims 10 to 13, characterized in that the system (51) for making the porous body (24) vibrate consists of a winding (27)

connected to an alternating current source (4) and surrounding the case (23) which is permeable to the magnetic waves generated by the winding (27), the porous body (24) being made of a magnetostrictive material.

15. The device as claimed in any one of claims 10 to 13, characterized in that the system (151) for making the porous body (24) vibrate consists of a conductive rod (28) arranged coaxially with the porous body (24) and a conductive case (23), said conductive rod (28) and said case (23) being connected to an alternating current source (4), the porous body (24) being made of a piezoelectric material.

16. The device as claimed in claim 15, characterized in that the conductive rod (28) and/or the surface of the porous body (24) are covered with an insulator (45; 47).

17. The device as claimed in any one of claims 10 to 13, characterized in that the system (251) for making the porous body (24) vibrate consists of two transducers (29, 29') which are fixed to the ends (43) of the porous body (24) and are connected to an alternating current source (4), said transducers (29, 29') consisting of a piezoelectric material.

18. The device as claimed in claim 17, characterized in that each transducer (290, 290') has a support means (291) fixed to the case (23), said support means (291) having a recess (52) in which one end (43) of the porous body (24) is positioned, said support means (291) having at least one pair of radial holes (293a, 293b), each pair containing a piezoelectric element (294) in one hole and a resilient application means (295) in the other hole of the same pair (293a, 293b) in order to keep the piezoelectric element (294) bearing against the porous body (24), the holes in each pair (293a, 293b) being diametrically opposite.

19. The device as claimed in claim 18, characterized in that the support means (291) has two

pairs of holes (293a, 293b), the two pairs of holes (293a, 293b) being arranged in perpendicular directions, and in that the two piezoelectric elements (294) are supplied with signals that are offset by one
5 fourth of a period with respect to each other and, in combination with the prestressing springs (295), cause displacement of the porous body (24) in an overall circular trajectory.